

## REMARKS

The foregoing amendment does not include the introduction of new matter into the present application for invention. Therefore, the Applicant, respectfully, requests that the above amendment be entered in and that the claims to the present application be, kindly, reconsidered.

The Office Action dated March 3, 2004 has been received and considered by the Applicants. Claims 1-7 are pending in the present application for invention. Claims 1-7 stand rejected by the March 3, 2004 Office Action.

The Abstract and the Specification of the disclosure have been objected to because of informalities. The foregoing amendment to the specification has corrected the oversights mentioned in the Office Action.

The Office Action rejects Claims 4-5 under the provisions of 35 U.S.C. §112, second paragraph due to the recitation of the term "the defocus" having insufficient antecedent basis. The foregoing amendment to the claims has corrected this oversight.

The Office Action rejects Claims 1-7 under the provisions of 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,091,691 issued to Yoo et al. (hereinafter referred to as Yoo et al.), in view of U.S. Patent No. 6,201,780 issued to Katayama (hereinafter referred to as Katayama). The Examiner states that it would have been obvious to one of ordinary skill in the art at the time the invention was made to create the invention as recited by the rejected claims by modifying the phase structure of Yoo et al. to include a plurality of concentric area inducing a wavefront deviation in the first radiation beam that globally approximates a flat wavefront deviation as taught by Katayama, the motivation being for the flat wavefront deviation to be globally approximated so that the focal point of the first radiation beam is globally optimized. .

The Applicants would like to, respectfully, point out that the Examiner making the rejection states that Yoo et al. disclose a second radiation beam having a second wavelength different from the first wavelength, the second radiation beam including a central sub-beam and an outer sub-beam, wherein the central sub-beam is disclosed at FIG. 2b, elements A1 and A2 and the outer sub-beam is disclosed as A3 within FIG. 2b. The Applicants respectfully disagree. Yoo et al. clearly disclose elements A1, A2 and A3 within FIG. 2b are portions of an objective lens and not a central sub-beam and an outer sub-beam as asserted within the Office Action. The

rejected claims recite that the head includes a first radiation beam having a first wavelength and a second radiation beam having a second wavelength different from the first wavelength, with the second radiation beam including a central sub-beam and an outer sub-beam. The Examiner has used portions of a lens to reject the specific recitation of the second radiation beam including a central sub-beam and an outer sub-beam. The Applicants, respectfully, point out that lens areas A1, A2 and A3 are described as being employed within different lens, by Yoo et al. for each of the radiation beams having a wavelengths of 650 nm or 780 nm, and that neither the wavelength of 650 nm nor the 780 nm radiation sources of Yoo et al. has a central sub-beam and an outer sub-beam (see column 4, line 34-column 5, line 33). The rejected claims recite that the radiation source generates a first radiation beam having a first wavelength and a second radiation beam having a second wavelength different from the first wavelength, wherein the second radiation beam includes a central sub-beam and an outer sub-beam. The Examiner has ignored the clear recitation within the rejected claims that the radiation source generates the second radiation beam includes a central sub-beam and an outer sub-beam and employed areas of a lens to read on the clear recitation of a radiation source as recited by the rejected claims.

The Examiner further states that Yoo et al. teach an optical system with a non-periodic phase structure, the phase structure inducing a wavefront deviation in the central sub-beam that compensates the difference in spherical aberration due to the first and second transparent layer. The Applicants, respectfully, point out that the Examiner in this portion of the rejection is using the same portion A2 of the lens that was used to read on the recited first and second radiation beams as previously discussed. The Applicants assert that the Examiner may not read the optical system taught by Yoo et al. on both the radiation light sources and the optical system recited by the rejected claims to the present invention. The optical system and radiation source recited by the rejected claims are separate elements, and must be treated as separate elements. The Examiner may not read a single element within the cited reference, Yoo et al., on multiple elements recited by the rejected claims. The Office Action has ignored the recited claim elements; therefore there remain elements within the rejected claims that are not found within the rejection made by the Office Action.

Moreover, Examiner has failed to shown where within the cited reference, Yoo et al., that the phase structure inducing a wavefront deviation in the central sub-beam that compensates the difference in spherical aberration due to the first and second transparent layer

exists. The Applicant, respectfully, assert that there is no discussion related to phase structure inducing a wavefront deviation within the cited reference, Yoo et al., much less any teaching for a phase structure inducing a wavefront deviation in the central sub-beam that compensates the difference in spherical aberration due to the first and second transparent layer

Furthermore, there are portions portion of the above-discussed element that the Examiner admits are not contained within Yoo et al., for the phase structure including a plurality of concentric areas inducing a wavefront deviation within the first radiation beam that globally approximates a flat wavefront deviation; which the Examiner states are found in Katayama. Katayama. The Applicants respectfully point out that Fig. 6 of Katayama illustrates a phase plate 24 in which the phase difference of light that passes through is  $2\pi$  in relation 780 nm light. Accordingly, Katayama illustrates a phase plate having periodic phase structure. The reject claims recite a “non-periodic phase structure”. Therefore, there again exist elements that are not found in the combination made by the Office Action.

Accordingly, this rejection is respectfully, traversed

The Examiner making the rejection further states that with regard to Claim 2, that Yoo et al. disclose that the photosensitive area has an edge arranged in the dark area of the intensity distribution. The Applicants would like to, respectfully, point out that Claim 2 depends from Claim 1 which has previously discussed is believed to be allowable. Therefore, Claim 2 is believed to be allowable.

The Examiner making the rejection further states that with regard to Claim 3, Yoo et al. disclose that the phase structure induces a wavefront deviation in the second radiation beam that globally approximates spherical aberration and defocus, the defocus changing the axial distance between the focus of the central sub-beam and the focus of the outer sub-beam. The Applicants, respectfully, disagree. There is no teaching for a wavefront deviation in the second radiation beam that globally approximates spherical aberration and defocus, the defocus changing the axial distance between the focus of the central sub-beam and the focus of the outer sub-beam within Yoo et al.

The Examiner making the rejection further states with regard to Claim 4, Yoo et al. disclose that the phase structure introduces a defocus in the central sub-beam. The

Applicants as previously discussed, respectfully, point out that there is no teaching, or suggestion, within Yoo et al. for a phase structure introduces a defocus in the central sub-beam.

The Examiner making the rejection further states that with regard to Claim 5, Yoo discloses the phase structure introduces a defocus in the outer sub-beam. The Examiner notes that the focus of the light going through the A3 portion of the phase structure deviates from the accurate focal point and is therefore defocused by the phase structure. The Applicants as previously discussed, respectfully, point out that there is no teaching, or suggestion, within Yoo et al. that the phase structure using in the above discussed rejection was the periodic phase structure of Katayama and that cannot be read upon a non-periodic phase structure of the rejected claims.

The Examiner making the rejection further states that with regard to Claim 6, Yoo et al. disclose the axial distance between the focus of the central sub-beam and the focus of the outer sub-beam is at least 12.5  $\mu\text{m}$ . The Examiner notes that the axial difference between the focus of the central sub-beam and the focus of the outer sub-beam appears to be on the magnitude of may times larger than 12.5  $\mu\text{m}$ . The Applicants request that the Examiner substantiate this rejection. The Applicants, respectfully, point out that the Examiner is inserting 12.5  $\mu\text{m}$  without any teaching within Yoo et al. to do so.

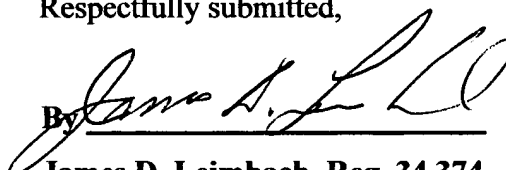
The Examiner making the rejection further states that with regard to Claim 7, Yoo et al. discloses a device for scanning two types of optical record carrier, the device including an optical head according to Claim 1 that includes a four segment light detector. Yoo et al. does not disclose an information processing unit for error correction. The Examiner further states that Katayama discloses an information processing unit for error correction that process data from a four segment light detector and generates a focus and tracking error signals. Specifically, the Examiner further states that it would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the device of Yoo et al. the information processing unit of Katayama, the motivation being to generate focus and tracking error signals to correct errors in focusing and tracking. The Applicants would like to, respectfully, point out The Applicants would like to, respectfully, point out that Claim 7 depends from Claim 1 which has previously discussed is believed to be allowable. Therefore, Claim 7 is believed to be allowable.

New Claims 8-16 have been added that are of similar scope to claims 1-7. Therefore, Claim 8-16 are believed to be allowable. In an effort to move the present application for invention towards allowance, the Applicants have amended the claims to the invention.

Applicant is not aware of any additional patents, publications, or other information not previously submitted to the Patent and Trademark Office which would be required under 37 C.F.R. 1.99.

In view of the foregoing amendment and remarks, the Applicant believes that the present application is in condition for allowance, with such allowance being, respectfully, requested.

Respectfully submitted,

By 

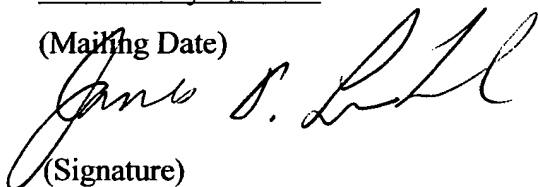
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**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited this date with the United States Postal Service as first-class mail in an envelope addressed to: COMMISSIONER FOR PATENTS,  
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on: July 3, 2004

(Mailing Date)



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